

Application No. 10/716,735
Amendment dated June 7, 2005
Reply to Office Action of April 1, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

CLAIMS:

Please amend claims 3, 4, 7, 8, 13, 17, 18, and 20, and cancel claims 1, 2, 6, 12, 15, 16, and 25, as follows:

1-2. (Canceled)

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3. (Currently Amended) ~~The method of claim 4,~~ A method of providing a Premature Descent Alert for an aircraft during a final landing approach, the method comprising:
- determining a plurality of Final Approach Flight Safety Altitudes for each of a plurality of runways;
- storing the determined Final Approach Flight Safety Altitudes in association with each corresponding runway upon a media readable by a Terrain Awareness and Warning System ("TAWS");
- identifying upon which runway an aircraft will land; and
- generating a Premature Descent Alert during the final landing approach for the aircraft to the runway by reference to the determined Final Approach Flight Safety Altitudes for the identified runway, wherein the Final Approach Flight Safety Altitudes further comprise Final Approach Flight Safety Altitudes corresponding to each of at least two approaches to at least one of the runways.

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4. (Currently Amended) ~~The method of claim 1,~~ A method of providing a Premature Descent Alert for an aircraft during a final landing approach, the method comprising:
determining a plurality of Final Approach Flight Safety Altitudes for each of a
plurality of runways;
storing the determined Final Approach Flight Safety Altitudes in association with
each corresponding runway upon a media readable by a Terrain Awareness
and Warning System ("TAWS");
identifying upon which runway an aircraft will land; and
generating a Premature Descent Alert during the final landing approach for the
aircraft to the runway by reference to the determined Final Approach Flight
Safety Altitudes for the identified runway, wherein the Final Approach Flight Safety Altitudes corresponding to each of the runways correspond to determined distances from each runway, the final approach safety altitudes representing step-down points on a flight safety altitude for reference by an aircraft landing on the runway.
5. (Original) The method of claim 4, wherein the Final Approach Flight Safety Altitudes are between a Final Approach Fix point for the runway and a runway.
6. (Canceled)

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7. (Currently Amended) ~~The method of claim 1,~~ A method of providing a Premature Descent Alert for an aircraft during a final landing approach, the method comprising:
- determining a plurality of Final Approach Flight Safety Altitudes for each of a plurality of runways;
- storing the determined Final Approach Flight Safety Altitudes in association with each corresponding runway upon a media readable by a Terrain Awareness and Warning System ("TAWS");
- identifying upon which runway an aircraft will land; and
- generating a Premature Descent Alert during the final landing approach for the aircraft to the runway by reference to the determined Final Approach Flight Safety Altitudes for the identified runway, wherein at least a portion of the plurality of Final Approach Flight Safety Altitudes are determined during the aircraft's flight in which the Final Approach Safety Altitudes are referenced.

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8. (Currently Amended) ~~The method of claim 1,~~ A method of providing a Premature Descent Alert for an aircraft during a final landing approach, the method comprising:
determining a plurality of Final Approach Flight Safety Altitudes for each of a
plurality of runways;
storing the determined Final Approach Flight Safety Altitudes in association with
each corresponding runway upon a media readable by a Terrain Awareness
and Warning System ("TAWS");
identifying upon which runway an aircraft will land; and
generating a Premature Descent Alert during the final landing approach for the
aircraft to the runway by reference to the determined Final Approach Flight
Safety Altitudes for the identified runway, wherein at least a portion of the
Final Approach Flight Safety Altitudes are each determined such that they
lie upon a curve that approximates a vertical flight path.
9. (Original) The method of claim 8, wherein at least a portion of the curve is a quadratic curve.
10. (Original) The method of claim 8, wherein the portion lying upon a curve that approximates a vertical flight path is within a segment nearest the runway.

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11. (Original) The method of claim 8, wherein the curve approximates a dive and drive flight path.

12. (Canceled)

13. (Currently Amended) ~~The method of claim 1,~~ A method of providing a Premature Descent Alert for an aircraft during a final landing approach, the method comprising:

determining a plurality of Final Approach Flight Safety Altitudes for each of a plurality of runways;

storing the determined Final Approach Flight Safety Altitudes in association with each corresponding runway upon a media readable by a Terrain Awareness and Warning System ("TAWS");

identifying upon which runway an aircraft will land; and

generating a Premature Descent Alert during the final landing approach for the aircraft to the runway by reference to the determined Final Approach Flight Safety Altitudes for the identified runway, wherein a portion of the plurality of Final Approach Flight Safety Altitudes are determined during the aircraft's flight in which the Final Approach Safety Altitudes are referenced and are determined such that they lie upon a curve that approximates a vertical flight path.

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14. (Original) The method of claim 13, wherein the portion of Final Approach Flight Safety Altitudes determined such that they lie upon a curve that approximates a vertical flight path is within a segment nearest the runway.

15-16. (Canceled)

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17. (Currently Amended) ~~The TAWS of claim 15,~~ A Terrain Awareness and Warning System (TAWS) for an aircraft, the TAWS comprising:

at least one information database configured to store elevation and position information for a terrain region and a plurality of Final Approach Flight Safety Altitude values specific to each of a plurality of runways;
a look-ahead warning generator configured to receive indications of terrain clearance alerts and communicate the indications by at least one of a visual display and an aural alert; and
a processor coupled to the information database and the look-ahead warning generator, the processor configured to identify a runway on which the aircraft will land, and employ the Final Approach Flight Safety Altitude values for the identified runway to cause the look-ahead warning generator to generate an alert if the aircraft flies below the Final Approach Flight Safety Altitude values for the identified runway when the aircraft is in its final approach to the runway, wherein the Final Approach Flight Safety Altitudes specific to each of the plurality of runways further comprise Final Approach Flight Safety Altitudes specific to each of at least two approaches to at least one of the runways.

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18. (Currently Amended) ~~The TAWS of claim 15, A Terrain Awareness and Warning System (TAWS) for an aircraft, the TAWS comprising:~~

at least one information database configured to store elevation and position information for a terrain region and a plurality of Final Approach Flight Safety Altitude values specific to each of a plurality of runways;

a look-ahead warning generator configured to receive indications of terrain clearance alerts and communicate the indications by at least one of a visual display and an aural alert; and

a processor coupled to the information database and the look-ahead warning generator, the processor configured to identify a runway on which the aircraft will land, and employ the Final Approach Flight Safety Altitude values for the identified runway to cause the look-ahead warning generator to generate an alert if the aircraft flies below the Final Approach Flight Safety Altitude values for the identified runway when the aircraft is in its final approach to the runway, wherein the Final Approach Flight Safety Altitudes specific to each of the runways correspond to predetermined distances from each runway, the final approach safety altitudes representing step-down points of a flight safety altitude for reference by an aircraft landing on the runway.

19. (Original) The TAWS of claim 18, wherein the Final Approach Flight Safety Altitudes are between a Final Approach Fix point for the runway and a runway.

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20. (Currently Amended) ~~The TAWS of claim 15,~~ A Terrain Awareness and Warning System (TAWS) for an aircraft, the TAWS comprising:

at least one information database configured to store elevation and position information for a terrain region and a plurality of Final Approach Flight Safety Altitude values specific to each of a plurality of runways;

a look-ahead warning generator configured to receive indications of terrain clearance alerts and communicate the indications by at least one of a visual display and an aural alert; and

a processor coupled to the information database and the look-ahead warning generator, the processor configured to identify a runway on which the aircraft will land, and employ the Final Approach Flight Safety Altitude values for the identified runway to cause the look-ahead warning generator to generate an alert if the aircraft flies below the Final Approach Flight Safety Altitude values for the identified runway when the aircraft is in its final approach to the runway, wherein at least a portion of the Final Approach Flight Safety Altitudes are each determined such that they lie upon a curve that approximates a vertical flight path.

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21. (Original) The TAWS of claim 20, wherein the portion of the Final Approach Flight Safety Altitudes determined such that they lie upon a curve that approximates a vertical flight path is determined during the flight in which the Final Approach Flight Safety Altitudes are referenced.
22. (Original) The TAWS of claim 20, wherein at least a portion of the curve is a quadratic curve.
23. (Original) The TAWS of claim 20, wherein the portion lying upon a curve that approximates a vertical flight path is within a segment nearest the runway.
24. (Original) The TAWS of claim 20, wherein the curve approximates a dive and drive flight path of the aircraft.
25. (Canceled)